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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,249	09/29/2003	Toshio Mikiya	10210/9	3178

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EXAMINER

TALBOT, MICHAEL

ART UNIT	PAPER NUMBER
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3722

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,249

Applicant(s)

MIKIYA ET AL.

Examiner

Michael W. Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005 (amendment).
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12, 14 and 15 is/are rejected.
7) ☒ Claim(s) 13 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 08 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The objection of the specification is withdrawn due to Applicant's amendment filed on 27 June 2005.

Claim Rejections - 35 USC § 112

2. The claim rejection under the second paragraph of 35 U.S.C. 112 outlined in the first Office Action dated 26 January 2005 have been withdrawn due to Applicant's amendment filed on 27 June 2005, however the following second paragraph of 35 U.S.C. 112 rejections must be addressed:

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "the first determination unit" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the first determination unit" in two occurrences in lines 11 and 12 and again in line 15. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5,9,10,11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoji et al. '006 in view of Aoshima et al. 329. With regards to claim 5, Shoji et al. '006 shown in Figures 1-4 an electric drill (3) having a motor (3'), a main switch (9) connected in series between the motor and a power supply (8), a current detector (10) for detecting a load current through the motor, a determination unit (15) for determining if the load current exceeds a first reference value and a control unit (16) for shutting off the current through the motor if the load current exceeds a first reference value, and subsequently supplying current to the motor if the load current decreases below the first reference value. With regards to claim 9, Shoji et al. '006 further shows a second determination unit (12) for determining if the load current exceeds a second reference value and a load current indication unit (13,14) for shutting off the current through the motor if the load current exceeds a first reference value, and subsequently supplying current to the motor if the load current decreases below the first reference value. With regards to claim 10, the current detector outputs a voltage corresponding to the load current and the determination unit receives and compares the voltage to a first reference value to determine whether the load current exceeds the first reference value (col. 4, lines 51-68 and col. 5, lines 1-21). With regards to claim 11, the current detector outputs a voltage corresponding to the load current and the second determination unit receives and compares the voltage to a second reference value to determine whether the load current exceeds the second reference value (col. 5, lines 29-68 and col. 6, line 1). With regards to claim 12, the control unit comprises an on-state self hold unit (SCR) for holding a first switch element in an on-state when a starting switch is turned on, a control signal supply unit for supplying an on-control signal for turning on the main switch element when the first switch element is in the on-state, a second switch which turns on when the first determination unit determines that the load current exceeds

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a first reference value and a unit for turning off the second switch when the load current falls below the first reference value (col. 5, lines 35-58).

Shoji et al. '006 lacks specific reference of the control unit "waiting at least a predetermined time after the determination" to supply the current from the power supply to the motor after the load had exceeded a preset reference value. Aoshima et al. '329 shows in col. 1, lines 32-54 a drill, after reaching the preset reference value (overload condition), is retracted so as to returned to a non-loaded condition and, following a certain predetermined period of time in this non-loaded condition, the drill is advanced again so as to resume cutting of the workpiece. In view of this teaching of Aoshima et al. '329, it is considered to have been obvious to modify the drill of Shoji et al. '006 with the time delay feature of Aoshima et al. '329 to prevent damage or breakage of the drill.

Claims 1,3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gill '123 in view of Omi et al. '956. Gill '123 shows in Figures 1-7 a low profile electric drill (10) having an annular cutter (18) with a plurality of cutting blades (200), a motor (14) for rotating at a high speed, a rotary shaft assembly (16) for rotating the annular cutter having its axis (A) substantially perpendicular from the axis (B) of the rotating shaft of the motor, a feed mechanism (72,80) incorporating a handle (100) for translating the rotary shaft assembly up and down along its axis and a magnetic base (20) for securing the electric drill to the workpiece. Gill '123 lacks the presence of the cutting blades having cemented carbide tips. Omi et al. '956 shows in Figure 2 a hole cutter (11) having a plurality of carbide tips, or first cutting teeth (13). In view of this teaching of Omi et al. '956, it is considered to have been obvious to replace the annular cutter of Gill '123 with the hole cutter described in Omi et al. '956 to prevent the blade edges of the first teeth from being damaged and ultimately extending the life of the cutting tool.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gill '123 in view of Shoji et al. '006. Gill '123 lacks an automatic motor stopping/re-driving mechanism. Shoji et al. '006 shows in Figures 3 and 4 an automatic motor stopping/re-driving mechanism comprising a main switch (9) connected in series between the motor (3') and a power supply (8), a current detector (10) for detecting a load current through the motor (3'), a determination unit (15) for determining if the load current exceeds a first reference value and a control unit (16) for shutting off the current through the motor if the load current exceeds a first reference value, and subsequently supplying current to the motor if the load current decreases below the first reference value. In view of this teaching of Shoji et al. '006, it is considered to have been obvious to incorporate an overload protection mechanism to the electric drill of Gill '123 to prevent the electric drill from overloading and causing damage to the drill and/or annular cutter and ultimately extending the life of the drill.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoji et al. '006 in view of Gill '123. Shoji et al. '006 lacks a rotary shaft assembly for rotating the annular cutter having its axis substantially perpendicular from the axis of the rotating shaft of the motor. Gill '123 shows in Figure 2 a rotary shaft assembly (16) for rotating the annular cutter having its axis (A) substantially perpendicular from the axis (B) of the rotating shaft of the motor. In view of this teaching of Gill '123, it is considered to have been obvious to realign the orientation of the rotary shaft assembly and the motor shaft of Shoji et al. '006 to increase the drill's usability range and to provide a more compact design.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shoji et al. '006 in view of Omi et al. '956. Shoji et al. '006 lacks the presence of the cutting blades having cemented carbide tips and a plurality of swarf exhaust grooves. Omi et al. '956 shows in Figures 1 and 2 a hole cutter (11) having a plurality of carbide tips, or first cutting teeth (13) and

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a plurality of cutting chip discharge passages (18). In view of this teaching of Omi et al. '956, it is considered to have been obvious to replace the annular cutter of Shoji et al. 006 with the hole cutter described in Omi et al. '956 to prevent the blade edges of the first teeth from being damaged, to provide an effective means of discharging the chips and ultimately extend the life of the cutting tool.

Allowable Subject Matter

4. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed 27 June 2005 have been fully considered but they are not persuasive.

Applicant contends that Gill '123 discloses the claimed invention except for the "high rotational speed" limitation. Gill '123 shows a low profile drill operating at a best mode of 1200 RPM (col. 2, lines 1-4). Applicant's argument on page 10, paragraphs 1-3 discusses how the invention "allows for the rotational speed of the cutter to be increased" but does not provide any evidence of what defines a "high rotational speed". Furthermore Applicant's argument that "the rotational speed may be about four times higher" than compared to the prior art does not provide evidence of what defines a "high rotational speed" or what the rotational speed of the prior art is so a proper comparison can be made between the two.

Applicant's argument relative to the modified limitation in claim 5 of "after waiting at least a predetermined time after the determination" has been addressed by the above 35 U.S.C. 103(a) rejection over Shoji et al. '006 in view of Aoshima et al. 329

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6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mr. Boyer D. Ashley, may be reached at 571-272-4502.

In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filling papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.



Michael W. Talbot
Examiner
Art Unit 3722
29 September 2005



BOYER D. ASHLEY
PRIMARY EXAMINER